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The Metropolitan Parks of Boston.

LIKE the memorable preliminary report of 1893, the second annual report of the Metropolitan Park Commission of Boston forms a contribution to the literature of public open spaces of great general interest, as well as of more immediate local concern. The first regular report was issued so soon after the creation of the commission that it formed a document of but slight scope, although the remarks of the landscape architects, Messrs. Olmsted, Olmsted & Eliot, concerning some of the conditions governing the establishment of public reservations, and particularly the definition of their boundaries, were of universal application. The present report is a work which may well make the people of Boston realize what invaluable treasures they possess in the magnificent public reservations that have already been established, as well as quicken their appreciation of the possibilities for enlightened municipal development that are contained within their metropolitan territory.

The wealth of illustrative material enhances greatly the value of this report. Besides a panoramic view of the vast reach of landscape, looking easterly from the highest eminence in the Blue Hills reservation—still called by its commonplace modern designation of Great Blue Hill, instead of its ancient historic name, Massachusetts Mount, which by all means should be restored—there are a number of beautiful photogravure plates, representing various notable scenes in the various reservations, such as the falls, the brook and the noble Oaks in the Beaver Brook reservation; a pleasant woodland interior showing how some of the old "wood-roads" in the Middlesex Fells have been improved for temporary use; and scenes from the borders of various pieces of water in the reservations, including an exceptionally lovely prospect over the Stony Brook Woods, across to the Blue Hills range, with Turtle Pond nestling in the middle distance, amid a sylvan setting. Then there are excellent maps of the several reservations, a diagram showing the relations of the Blue Hills and the Fells Parkways to the metropolitan district, and a careful enumeration in an outline sketch of all the landmarks visible in the panorama on every side from the Great Blue Hill.

The commissioners report takings to a total extent of 6,070 acres in the four reservations, which they have thus far laid out, while previous takings, amounting to about 1,600 acres, increase the total area in charge of the commission to nearly 7,700 acres. Altogether the total open space for recreative and water-supply uses in the Boston metropolitan district now amounts to almost 14,000 acres. The commissioners discuss their important trust in a conservative spirit that inspires confidence in their capacity for its proper administration. Great activities, yet scarcely entered upon, await them. These include the complicated problem of Charles River, the contemplated taking of the grand stretch of ocean shore at Revere Beach, and the providing of suitable facilities for access to the various reservations by means of parkways and boulevards.

The discussion by the landscape architects of various questions connected with the acquisition and development of public reservations, is of such general application and importance that it should be brought to the attention of park commissions, city authorities and students of municipal economy everywhere. Resuming the considera tion of the boundary question, it is pointed out how it has not been the habit of park commissions, speaking generally, to give much attention to the boundaries of public reservations.

It is generally easier to acquire the whole of a given parcel of real estate, though half of it is not really wanted, and then to omit the purchase of any of the next parcel, though half of that is sadly needed, than it is to acquire a part from this and a part from that for the sake of obtaining what is essential and omitting what is of less importance to the landscape of the domain to be preserved. There are few public grounds which are not grossly deformed by the imperfections of their boundaries. Almost everywhere the immediate saving of time and trouble for the surveyor, the conveyancer and the commission concerned has worked permanent injury to public interests in public scenery.

It is pointed out that these large reservations have been taken not for the sake of making an exhibition of fine trees, economic forestry, model roads or any other special thing or things, however desirable, but simply in order to provide the metropolitan community with fine scenery; and consequently that all work done within the reservations ought to be directed solely to preserving, enhancing or making available the charm, the beauty, or the impressiveness of that scenery.

The scenery of all the reservations thus far acquired is essentially sylvan. Sylvan scenery is compounded of the shape of the ground and vegetation. The variously sculptured or modeled forms of the earth's surface furnish the solid body of landscape which man seldom finds time or strength to mar. Vegetation, on the other hand, supplies the dress of living green which man often changes, strips away or spoils, but which he can generally restore if he so chooses.

Emphasis is laid on the necessity of regarding the ancient wood-roads that have been opened up in the reservations to serve pressing administrative needs as merely temporary affairs. They do not and cannot be made to exhibit the scenery as it ought to be and may be exhibited. The report states that one may easily drive through the whole length of the Blue Hills range by the present service road and come away disappointed, and that, contrariwise, it is easily possible to imagine a road along the range which, presenting one quiet or surprising picture after another, could not fail to awaken admiration of scenery in every observer. The reservations will not return to the community that dividend of refreshment which is rightly expected of them until roads and paths shall have been built with special reference to the exhibition of the scenery. Prolonged study, not only of the ground, but of complete topographical maps, is shown to be essential to the devising of such roads.

The opening or closing of vistas, and the modification

of vegetation for the sake of scenery, is work that is greatly needed in the woodlands.

Excepting work directed to ponding or turning water, the selection of high or low, evergreen or deciduous, crowded or separated types of vegetation is practically the only work which can be done for the enhancement of the beauty of the landscape, and work of this kind, well handled, will be productive of remarkable and important results. In general, this work ought to be directed to the selection and encouragement of those forms of vegetation which are characteristic of each type of topography. Sameness of treatment, regardless of site and exposure, is to be scrupulously avoided. On the windy summits of the Blue Hills the dwarf growths native to such hill-tops ought to be preserved or induced to take possession. On sunny crags and ledges, Pitch Pine, Cedar and Juniper should be led to find place, while the Hemlock should appear among shady rocks. At the bases of bold ledges now concealed by dull curtains of stump-growth, large areas may profitably be cleared and even pastured for the sake of exhibiting the forms of the rocks and the grand distant prospects discernible between them. In other places, where only short-lived sprout-growth now exists, seedlings of long-lived trees should be encouraged to start. On slopes of poor soil permanent thickets may be advisable, while some rich glade or valley may be devoted to the development of soft turf and broad-spreading trees. There is thus no limit to the variety of sylvan types of scenery which may gradually be developed within these broad reservations.

It is stated that the more delicate and difficult operations of this art of enhancing the beauty of the vegetal element in landscape must wait upon the building, or at least the planning, of the permanent roads and paths. These roads, it is stated, must be made to exhibit the scenery, and the vegetal scenery must be improved with reference to the roads.

Careful studies of the present conditions of the reservations have been wisely determined upon. For example, groups of competent naturalists have volunteered their services in the study of the flora and the fauna of the several localities. Their notes and their collections will be carefully preserved for reference, and will present invaluable means for comparison as time goes on and changes gradually occur.

Notes upon Poisonous Plants.

FATAL cases of poisoning by eating roots of wild plants, brought to our notice in the pages of the daily prints, again remind us that much remains to be learned by grown people, as well as children, concerning the very active properties of many of our common plants.

It was probably not in the mind of Senator Hatch and others in establishing departments of research in each state that such should be in any direct sense life-saving stations. If these experiment stations are to make life richer in a fuller knowledge of methods of crop-growing they may well find it a part of their work to make human life safer by diffusing information concerning, for example, the poisonous plants that surround us on every hand.

On account of appeals that have been made to the New Jersey Station for facts concerning poisonous plants, and in the face of the many fatal cases of poisoning that have occurred about us, I have been led to look somewhat systematically into the subject, and as a result no less than sixty-five species of plants have been listed and placed upon the roll of suspects. Of these many are injurious only to a slight degree, and that effect is not constant. Some persons can work daily among the roots and fresh leafy shoots of the Poison Ivy, Rhus Toxicodendron, without injury, while on the other hand other persons cannot pass near the plants without experiencing physical discomfort. I shall not soon forget the time when both my eyes were swollen to blindness by handling this plant. Many of the plants upon the list are poisonous only when taken into the system. In other words, the poisonous plants may, for convenience, be divided into those poisonous to touch (by contact) and those which are poisonous when eaten (by assimilation). It is to the latter class that attention should be most emphatically drawn, for these do the most injury.

Twice in the year there are outbreaks of poisoning. One of these occurs in spring, when every one is longing for some green thing, and most frequently the poison is taken into the system in the form of roots. Boys and others "go aforaging," and by accident or otherwise unearth some large fleshy roots; upon tasting them they are found to be sweet, or, at least, not disagreeable, and the mischief is begun, which ends in sickness, and sometimes death. The chances are that the fleshy roots belong to some species of plants of the Parsley family, some of the more common members of which are the Carrot, Parsnip and Celery, all three grown largely for food in the gardens. Even these well-bred plants are still somewhat poisonous to some persons. Thus there are cases of skin afflictions due to the handling of Celery-foliage, and some gardeners need to be protected against it if they work with these plants continuously. In like manner the Carrot is unsuited to some individuals as an article of diet, and when Parsnips are left to run wild in waste places for a few generations, a generation being two years in this plant, the root will become somewhat reduced in size and elaborate a poisonous principle that to many is positively harmless, and with others has caused death. This is by no means the only instance of culture holding the evil qualities in check. When cases of fatal root-poisoning occur it is not unlikely that they are due to the wild Parsnip, Pastinaca sativa. A more poisonous species of this Parsley family is the Poison Hemlock, Conium maculatum, which has come to us from Europe, and grows in waste places. This is a smooth, much-branched herb, three feet high, the stems of which are marked with purple specks, so that the name of Spotted Parsley is sometimes given to this species. The leaves consist of many leaflets and are ill-scented. A virulent poison, conicine, abounds in all parts, and should not be taken into the system.

A close relative of the Conium is the False Parsley, Cicuta maculata, also called Spotted Cowbane, Water Hemlock and Beaver Poison. This common species is a tall plant with the stems streaked with purple, but not spotted as in the Conium. The root is a deadly poison, and of all our poisonous plants is the part that causes the greatest number of deaths. Other species of the same family that are poisonous and have fleshy roots are the Water Parsnip, Sium cicutæfolium, growing in wet places, and the Cow Parsnip, Heracleum lanatum, which is also a coarse plant fond of the low ground.

It is difficult to lay down any rule, hard and fast, to serve as an invariable guide and protection against these venomous plants. The danger of persons eating the herbage to excess is not great, but, as before stated, the injury usually comes from the fleshy roots, which are attractive to the eye and not disagreeable to the taste. These, if eaten in early spring, when they are gorged with the poisonous qualities, are quite sure to lead to unpleasant, if not fatal, results. Every one should be impressed with the fact that some of these poisonous plants pass the winter chiefly as large fleshy roots and are to be shunned. Nothing in the form of wild plants should be eaten unless well known to be harmless, and fleshy roots particularly should be avoided. Most particularly of all let parents and school teachers admonish children of the great danger of promiscuous foraging in fields and woodlands, especially in early spring.

The second outbreak of poisonous cases comes with the ingathering of toadstools during the summer. This subject was fully treated in Garden and Forest by Dr. Farlow, under "Notes for Mushroom Eaters," about a year ago.

There are a number of plants, particularly in the Heath family, Ericaceæ, that injure live stock, as, for example, the Calf-kill, Leucothoë racemosa, and Lamb-kill, Kalmia angustifolia, as the common names strongly indicate.

Rutgers College. *Byron D. Halsted.*

Four Native Trees in the North-west.

THE importance of proper selection of species for forest-planting was not realized by the early planters on the north-western plains, and to-day the picture of the decaying trees in these early groves is one of the greatest discouragements to forest-planting. The Cottonwood is pre-eminently a tree of bottom lands, and even here it is never crowded into compact groves, but rather spread out into an open belt of varying width, according to the character of the soil and water-supply. Since it is rarely found on the high prairies, one would hardly expect to make lasting groves in such situations, and yet this was the tree most extensively planted at first, and it has proved a failure everywhere except on the low plains. Its almost universal use may be attributed to the facts that it was considered a rapid-growing tree; that it was comparatively abundant and was easily propagated. But when we compare the growth of this species with that of some better native trees one is inclined to dispute the general belief that it grows much more rapidly than other trees.

In the college tree plats here on the high prairie, taking the growth for every year since 1889, the average annual growth of the Cottonwood has been 27.1 inches; that of the Box Elder has been 24.2; of the White Elm, 24.1, and of the Green Ash, 16 inches. It will be seen that the annual growth of the Cottonwood has been only three inches greater than that of the Box Elder and the White Elm, which last tree is counted among those of comparatively slow growth. Of the trees planted in the spring of 1889 the tallest Cottonwood is eighteen feet eight inches high and seventeen inches in circumference at the crown, while the largest White Elm planted in the same year was sixteen feet high and ten and a quarter inches in circumference. A Box Elder of the same age was fifteen feet high, and the best Green Ash was only ten feet and a half high.

This shows some superiority in the Cottonwood in regard to size, but when we examine the trees for hardiness or vigor one of the plats shows that of 330 Cottonwood-trees planted, only fifty-eight per cent. are living, while of 243 Box Elders, ninety-seven per cent. are living; of 111 White Elms, eighty-four per cent. are living, and of 121 Green Ash-trees, eighty-five per cent. are living. Forty-two per cent. loss in the case of the Cottonwood as compared with fifteen per cent. loss in the case of the White Elm is significant.

In addition, then, to the extensive failures of early plantings of Cottonwood, this comparison shows the fruitlessness of using this tree on high prairies. It shows also that although the Box Elder leads the White Elm in average annual growth and in hardiness of constitution—that is, in the percentage of trees that have survived the first six years after planting—it must be remembered that when full-grown the Box Elder is neither a shade-tree nor a timber-tree, while the Elm is both. The Elm grows more rapidly than the Ash, and, so far, it is less subject to insect pests, and, therefore, deserves a higher rank, especially where shade and protection is the object of the planter rather than valuable timber.

State Agricultural College, Brookings, S. D. *L. C. Corbett.*

Foreign Correspondence.

Hippeastrums in England.

AT the present time the Hippeastrums are among the most showy and valuable of greenhouse decorative plants. Yesterday I had the pleasure of going through the houses devoted to the cultivation of these plants at the Chelsea establishment of Messrs. James Veitch & Sons, and was much struck with their wonderful variety and beauty. I gather from Bulletin No. 107 of the North Carolina Agricultural Experiment Station that Hippeastrums, or, as they are generally called in gardens, Amaryllis, are not grown to any great extent in the United States. This seems to me a fact to be regretted, and I hope that some enterprising grower will take up the subject seriously. I have little doubt that success would follow a genuine effort to popularize so gorgeous a flower, and one, moreover, which can be well grown without too much trouble.

THE PARENTAGE OF GARDEN HIPPEASTRUMS.—The race of Hippeastrums, as it now exists in England, is a creation of quite modern date. Some of the wild species or forms which have contributed to make the Hippeastrums what they now are—I am speaking, of course, of the purely artificial products of the gardener's art—have been in cultivation in this country for upwards of a century. H. equestre, from tropical America, and H. Reginæ, from Mexico, West Indies, etc. (introduced in 1728), have been the principal factors in furnishing the rich, deep red and crimson tints of the earlier hybrids; their influence can even now be discerned in some of the latest seedlings. H. aulicum, from central Brazil—introduced in 1819—and H. vittatum, an Andean species introduced in 1769, have also played an important part. H. Leopoldi, collected in the Peruvian Andes by Pearce and sent by him to Messrs. Veitch in 1869, and H. pardinum, also first discovered in the same regions as the last named by Pearce and sent by him to the Chelsea nursery in 1867, have been largely used by Messrs. Veitch in the production of their later seedlings, H. Leopoldi much the more extensively of the two. H. reticulatum, introduced from south Brazil in 1877, a rather small-flowered species well marked by the crimson veinings and reticulations of the segments, has given rise to a set of beautiful autumn-flowering hybrids, to which sufficient attention has not yet been paid. H. solandriflorum, a species introduced from Brazil in 1820, is remarkable for its long-tubed greenish-white flowers, closely resembling those of some of the Lilies of Japan, the Philippine Islands, etc.; this has given rise to some interesting hybrids, but it has played no part in the production of the regularly formed almost tubeless flowers, which at present so attract the attention of the horticultural public at the spring meetings of the Royal Horticultural Society in London. In fact, the Hippeastrum has become a florist's flower. The green bar in the centre of each segment, perhaps derived from H. psittacinum, has been eliminated, and even the base of the segments of many of the dark-colored seedlings is altogether clear of any trace of green. In the light-colored seedlings the green is evident enough. What in England would be regarded as a very great acquisition would be a race with white or blush flowers of as good form and substance as the beautiful rich red ones without the green eye which at present is so conspicuous. Five years ago Mr. Harry Veitch read a paper on the Hippeastrum at one of the meetings of the Royal Horticultural Society, and any one wishing to take up the cultivation of this beautiful genus should not fail to consult this paper, published in full in the society's journal. An extract of a few lines will show what has been done from a gardening standpoint: "Comparing the latest acquisitions with the original species in respect of size, we find that the flowers of the latter range from two and a half to five inches diameter, with segments from three-quarters to one and one-fourth inches broad, and with tubes three to four inches long; that of H. solandriflorum seven to eight inches long. Our best recent types have a diameter of nine to eleven inches, with segments three and a half to four inches broad, and the tube almost obsolete. As regards color, scarlet and red prevail in some of the natural species, crimson-scarlet veins, streaks and reticulations in others, and all with a larger or smaller green centre. . . . We have now an uninterrupted range of colors, from deep maroon-crimson through crimson, crimson-scarlet, pure scarlet, orange-scarlet, carmine, rose and rose-pink, to almost pure white, with striped and reticulated forms of all these shades of color." The dimensions above given, I may say, are now understated.

CULTIVATION.—The plan adopted by Messrs. Veitch & Sons is as follows: Two-thirds good fibrous loam and one-third cow-manure are brought together about the end of

July, and turned over and well mixed about three months later, taking care at all times to prevent the heap from getting too wet. Just before potting, nearly a third in bulk of sharp sand is added. Potting begins in mid-January, and the bulbs flower eight or ten weeks later. After potting, the pots are plunged; spent tan (stored for a year) from the tan-yards is the material used both at Chelsea and at Kew. No bottom-heat is applied at first, and if the soil is damp when used no water is given. For three or four weeks the temperature of the house is kept at fifty-five degrees, Fahrenheit; then a little bottom-heat is given, and the temperature is raised to sixty degrees. When in flower the plants may be moved into a cool house, but very little water will be needed unless the leaves are well developed. More failures result from overwatering than from all other causes combined. After flowering, the pot and half the upper exposed part of the bulb should be plunged again in tan and kept shaded during bright sunshine. A good syringing daily is advisable during bright weather. Bottom-heat, too, is beneficial. Growth is rapid, and the roots run through and over the pots for some feet into the plunging material. As soon as the foliage has attained full size the bottom-heat can be done away with; no shading is necessary, and gradually all light and air possible is allowed, and finally the pots are lifted out of the tan and allowed to stand without water on the beds until the potting season again arrives, when the old soil is shaken away and the dead roots removed. In good strong bulbs there will always be a number of thick, fleshy, healthy, living roots at potting-time, even after a drying of some months.

Seedlings.—At Kew we flower numbers of these in less than two years from sowing the seed. As soon as ripe, say, in May, we sow the seeds in pans in a warm house. When large enough to handle, the young plants are pricked off into beds not too far from the glass, and are kept growing continuously until October of the following year. They are then ripened off and potted in January or February. We sow seeds every year, only allowing those plants to seed which possess the color, form or some other quality desired. By starting with a few good parents a fine series of beautiful seedlings is soon procured. Messrs. Veitch never use manure-water at all, and repot every year. Others are equally successful by treatment widely different—that is, by never shaking out the bulbs at all, but repotting in slightly larger pots until the limit is reached, and using manure-water carefully during season of growth. A little crushed bone mixed with the soil is beneficial. The way we manage the bottom-heat at Kew is to have hot-water pipes—provided with valves, so as to regulate heat or stop it altogether—underneath the plunging-beds. The side walls which support the slabs on which the plunging material is placed prevent the heat from escaping laterally to any extent. By following such a course of treatment failure is practically impossible, but I am sure that in many parts of the United States really good results could be obtained by growing in cold frames. It is distinctly desirable to keep up a succession of seedlings, as plants propagated only from offsets have not the vigor of seedlings. Given good varieties to begin with, and cross-fertilization practiced only with vigorous bright colored or well-formed flowers, and all the resulting seedlings are well worth growing.

Kew. *George Nicholson.*

New or Little-known Plants.

Rose, Belle Siebrecht.

An illustration of this Rose, which is being distributed this year for the first time by Messrs. Siebrecht & Wadley, of this city, will be found on page 175 of this issue. The plant has already proved valuable when grown under glass. Its habit of constant bloom and the color of its flowers, which is a solid deep shade of pink, quite novel in Roses of this class, make it very useful for commercial florists. It is a vigorous grower and an abundant producer of good-sized flowers; the buds tapering and borne on long stout stems well furnished with vigorous leaves. Another strong point in its favor is the singular purity and richness of its color as seen under artificial light, and it really shows up more brilliantly under these conditions than any of the Roses now grown for commercial purposes. We are assured that the plants have proved perfectly hardy in the latitude of New York for several years, and if it has a constitution to endure our winters it will be a most welcome addition to our hardy garden Roses, since we have so few which flower the season through.

The plant is said to have originated with Messrs. Dickson & Sons, of Newtownards, Ireland, and, under the name of Mrs. W. J. Grant, it received the gold medal of the National Rose Society at the Chester show in 1892. It is said to be a cross between La France, which came from the seed of a Tea Rose, and Lady Mary Fitzwilliam, which is also a Hybrid Tea. This parentage will account for its ever-blooming qualities and its delightful fragrance.

Plant Notes.

Lindera Benzoin.—This hardy native Benzoin, Spice-wood or Spice-bush, sometimes called Fever-bush or Benjamin-bush, may be considered as familiar to comparatively few people, either as a garden-plant or in its native habitat in our woods, where it delights in moist rich soils or along the courses of streams and rivulets. Under good conditions it becomes a tall shrub six or eight to twelve or fifteen feet high, and it is among the earliest, although it is not the very earliest, of our indigenous species to blossom. In flower it always attracts attention by its short axillary, umbel-like clusters of small honey-yellow colored blossoms, which appear thickly along the naked branches long before there are any leaves visible. The Spice-bush is dicœcious, bearing its staminate or pollen flowers and its pistillate or fruit-producing flowers on separate plants, and the usually more numerous blossoms and the yellow anthers of the male or staminate plants give them a generally brighter aspect. The oval, smooth, shining bright red fruit, which matures in the autumn, is more conspicuous than the flowers, and remains on the plant until after the leaves fall, if it is not previously eaten by birds, some kinds of which seem very fond of it. In planting the Spice-bush for the autumnal fruitage a majority of the plants selected should be pistillate, but a few staminate plants should be placed among them, so as to insure fertilization. If, on the other hand, it is desired to get the best effect from the not very conspicuous early spring flowers the staminate plants would prove somewhat the most attractive. In a natural condition in shady places the plants commonly have a thin and straggling appearance, but growing in good garden-soil or by judicious pruning they form neat compact bushes. Although in nature the Spice-bush is generally found in moist situations, its free growth in ordinary shrubbery plantations or in garden cultivation shows that unusual moisture is not essential to its vigorous development. The leaves change to a pretty soft yellow color before they fall. All parts of the Spice-bush are richly spicy, aromatic, but this quality is strongest in the bark and fruit. In some parts of the country the people use an infusion or decoction of the twigs or bark as a drink in fevers or as a vermifuge, and the dried and powdered fruits were sometimes used as a substitute for allspice during the Revolutionary War. The benzoin of commerce is derived from an entirely different East Indian plant, or plants, belonging to another family. The drug was early known as "Incense of Java," or by the Arab name, "Luban Jawi." By leaving off the two first letters of the first word it is said the name gradually became corrupted and changed until it got to Benjamin, the product being sometimes known as Gum Benjamin, and our Lindera getting its occasional name of Benjamin-bush from some similarity in odor to the product from the oriental tree.

PRUNUS DAVIDIANA.—This fine, early-flowering Peach, or Plum, is now in full bloom in the Arnold Arboretum. It is almost wonderful to see this handsome tree, twelve to fifteen feet high, with its large white flowers, borne in the greatest abundance, at this season before Forsythia or Spiræa Thunbergii even begins to show color. The flowers literally cover the tree; just as a little later, the familiar Peach, its close relation, is clothed with pink, so now, this Peach, or Plum, is a mass of white—not absolutely snow-white, however, for a slight tinge of color heightens the effect. This plant appears to be perfectly hardy, but early frosts sometimes destroy or diminish the bloom in this vicinity, which is quite natural under the circumstances and not a sufficient reason for discarding it from our collections; one favorable season out of three would justify its cultivation. It demands the same sort of treatment given to the

Fig. 27.—Rose, Belle Siebrecht.—See page 174.

Japanese Plums—that is, a well-drained soil, a sheltered position and plenty of food. The propagation is by grafting.

Erythroniums.—Dog-tooth Violets are familiar wild flowers in the states east of the Mississippi, where carpets of their beautiful leaves are often seen in slightly shaded places. While the flowers are abundant in some cases, whole colonies of the plants will be found with few, if any, flowers during their season. This is owing to lack of maturity of the bulbs, and sometimes to their increase in numbers. The root-action and habit of increase of Erythroniums are curious and interesting and have given rise to much discussion. It occurred lately to one inquirer to investigate the real facts, which he discovered by cultivation in glass-sided boxes, and Mr. Blodgett, in the *Botanical Gazette*, vol. xix., page 61, has given a very lucid account of the reproduction of the species. The California Erythroniums are probably not much grown in eastern gardens, though they are perfectly hardy in this latitude and of the easiest culture. All the species are charming little plants. Their leaves are usually richly spotted and marked with colorations quite distinct from our eastern Adder's Tongue. E. Howelli has pretty flowers, salmon-pink in color. The leaves of this species are handsomely figured. E. purpurascens is deeper in its shadings, and is a combination of yellow and reddish purple. E. citrina has large flowers of citron-yellow, with a lighter centre. E. grandiflora and E. Hendersonii have respectively yellow and dark purple flowers. On strong bulbs the scapes will often bear two flowers. The effect of all these species is very pleasing and quite distinct from E. Americanum. They flower here in April.

Tulipa Kaufmanniana.—This beautiful Tulip is now in full flower, while the Duc von Thol Tulips, in the same border, are hardly showing buds, much less color; it is certainly the best early Tulip we have. It is a native of central Asia and has been in cultivation since 1877; it is apparently slow in propagation, or its merits are not widely known, for the bulbs are still difficult to obtain and are high-priced. The perianth is a bright sulphur-yellow, tinted with red, and as large as Tulipa Gesneriana; the peduncle is eight inches or more high, but varies somewhat, according to bad or favorable seasons; the leaves are large and glaucous. Taken altogether, it is a plant deserving high commendation.

Iris orchioides.—This Turkestan species is the second yellow Iris of the season, being preceded by the little I. Danfordiæ by a month or more usually. I. orchioides is one of the Juno section, and Mr. Gerard, after testing it for three years, pronounces it reliably hardy here, and rather more robust than I. Caucasica, I. persica and others of the same section. Heavy soil and a sunny location seem to suit it perfectly. It resembles I. Caucasica in habit, though a taller plant in having two rows of long tapering lax leaves clasping the stem in opposite rows. The stems are one and a half to two feet high. The flowers are borne from the nodes on short stems, and are very attractive, being of a rich deep yellow of great purity, with only a small olive blotch on the fall. The flowers are small, but, as there are three or four opened at once usually on the same stem, a colony of this Iris is very attractive. Its leaves commence to appear very early in the season, and are sometimes touched by hard frosts. Curiously enough they were not injured at all this year, though the plants caught the early morning sun during the extremely cold early year, a most severe test for any plant. There is also a variety of this plant with lavender-colored flowers. I. Caucasica, which flowers slightly earlier, might dispute the place of the second early yellow Iris, but its color is at best a greenish yellow, and the type is scarcely worth garden room.

Iris Sindjarensis, from Mount Sindjar, Mesopotamia, has already been noted in Garden and Forest as a very handsome Juno Iris, with charming flowers of a light lavender hue and pleasantly fragrant. This has a habit similar to that of I. orchioides, though the stems are shorter, the flowers less frequent, and the leaves a darker green. The flowers are also borne on shorter stems and are larger and more effective from their broader falls. This has survived two winters with Mr. Gerard, but does not seem as vigorous as I. orchioides. It commences to grow just before the end of November. I. Sindjarensis, I. orchioides and I. Rosenbachiana are a trio of Irises of the same section which should please any grower of hardy plants.

Nymphæa flammea.—Flowers of this Water-lily have been sent us by Mr. J. Brydon, Yarmouthport, Massachusetts. This is one of a valuable series of hybrids produced by Monsieur Marliac, of which he gave an interesting account last year. It seems that he succeeded in securing a hybrid between a tropical Nymphæa and one of the hardy species of the north, and this hybrid produces seeds abundantly. Monsieur Marliac has in this way produced a series of hybrids, ranging in color from white to intense red. They generally bear medium or small-sized flowers; they are perfectly hardy and very free and continuous bloomers. N. Laydekeri of this series is now well known to growers of aquatics and is very satisfactory in cultivation. The flowers on first opening are a delicate pink, changing later to cherry-red. N. flammea appears to be of similar habit, size and character, but is much more intense in color. In the old flower sent us the color approaches that of N. rubra, but is not quite a self-color. Another variety, N. ignea, is said to be more intense in color. The new varieties, unlike N. Laydekeri, it is said, can be propagated by division.

Ochna multiflora.—A London nurseryman recently reintroduced this stove evergreen, which was first brought to England in 1820, but somehow became lost for a long time. It is most attractive when in fruit. The flowers are somewhat like those of a yellow Potentilla. After the petals fade the calyx and receptacle gradually change from a greenish yellow to a rich vermilion; the receptacle enlarges considerably, and on it are the carpels, about six in number, containing the seed. The carpels, which are at first a pea green color, change when ripe to a deep purple, and give the plant a very odd appearance. It does well in a temperate house. The seeds germinate freely in a few weeks after being sown.

Oxalis Bowiei.—To be in flower at this season these bulbs should be potted up and started in three-inch pots about the beginning of January. Afterward three or four of the plants may be massed in a wire basket and hung up in a warm greenhouse near the roof. Perhaps no other plant makes so pleasing a display of flowers and foliage for such a small sum of money. Oxalis Bowiei can be brought into flower at any time of the year by putting in the bulbs, in winter-time, about two months ahead of the time they are wanted in bloom, and in summer three or four weeks ahead of the time will suffice. It is unsatisfactory to buy mixed collections of Oxalis, since there are so many species of little or no value, and scarcely any two of them have the same habits. The flowers of O. Bowiei are a light rose color, and when well developed they are nearly two inches in diameter. O. cuprea and O. versicolor are two very good kinds; they have yellow and white flowers respectively.

Cultural Department.

Spring-flowering Bulbs.

My custom is to uncover my bulb-beds during the first week of April. This is early enough for this latitude; indeed, some would consider it too early, but I do not leave the ground wholly bare. There will still be sharp frosts which will nip the tender shoots which have started beneath the covering, and so a little hay or other material should be left where it can be easily got when a chilly evening threatens. The young sprouts will become hardened in ten days so as to stand any cold which is likely to come. Ixiolirions will come up under covering so colorless as to appear almost transparent, and things as hardy as Alliums, when first exposed to the air, are unable to endure any frost at all. Then, why not delay two weeks longer? might be asked. For this reason: By the middle of April many of the early-starting things would be

grown so lank and long that they would be unable to recover their proper sturdiness. It is better to uncover too early than too late. Although the winter was severe, I find nearly everything has come through in good condition; indeed, much to my surprise, I find that some tubers of Bletia hyacinthinæ, planted four inches deep and entirely unprotected by covering, are alive and sound. Some tubers of Smilax, also uncovered, appear sound, but about them I am not sure. Both of these I have grown successfully out-of-doors with a few inches of leaves over them, and it now seems that even that precaution is not always necessary. Until three years ago I did not care much for Ixias—not that I did not admire their beauty, but it was too much trouble to grow them under glass; but of late I have grown them out-of-doors with complete success. They should be planted very late, so that they shall not make an autumnal growth (the end of November is a good time), and should then be covered with several inches of some material, the leaves of the Pine in preference. Over these I have heretofore laid shutters to turn off the rain, but I find this not really necessary; the bulbs will do as well without it, but will be a little later in starting. I planted last November a great many Tritonias and Sparaxis with the Ixias; the former are not yet up, but the Sparaxis are doing finely. S. (Dierama) pulcherrima is dead, I am sorry to say, and somewhat surprised as well, for Mr. Putnam has wintered it in Salem, twenty miles farther north than Canton.

The Snowdrops, of course, are past, but Erythronium albidum, which began to blossom before they did, has still a flower or two. The first Narcissus this year is Minimus, a perfect gem, of the same shape as Emperor, and comparing with it as David with Goliath. Scoticus, which usually takes precedence, is, as yet, hardly showing bud. The flowers of all varieties of Narcissi in my grounds are likely to be very few. No Tulips are yet showing color, the most advanced at the present time being White Pottebakker and Tulipa Greigi, the latter being bulbs kept over winter in the cellar, and planted out April 1st. I tried the same plan last year both with that Tulip and Iris Susiana, and found it perfectly successful.

Canton, Mass. *W. E. Endicott.*

Work of the Season.

SPECIMEN Gloxinias are now in eight-inch pots, and the earliest have a good spread of leaves and promise to be in bloom by the middle of May. A second batch, from seeds sown late last summer, will come in in July. They will be our earliest next season. We find it better to raise a lot of small bulbs each summer, as these always make much finer plants than seedlings raised the current season, no matter how early the seeds are sown, and, besides, it is easier to raise them during the heat of summer. Of late years we have found it better to keep the bulbs in the pots or boxes in which they have grown, than to shake them out and store them in sand. Whenever the bulbs shrivel, as they must when kept in this way, a loss of vitality results, no matter if they plump up when watered. Our bulbs are kept under the greenhouse benches, protected from the direct influence of hot-water pipes by boards. They will need water two or three times during the dormant season, but we always try them, and if firm they are passed by. Despite the moderate temperature, growth commences early in March, and as fast as a few leaves show we bring them to the light. Our finest plants last season were those which we did not repot. We grew them over, with the aid of a little manure-water, when coming into flower. Success with these does not depend so much on soil, although I used to think it did. Proper location is more important. The best structure to grow Gloxinias in is a low, close house, so ventilated that direct air does not strike them near the glass, but yet screened by a light shading. These conditions are essential. For a while our plants are kept on the dry side. In fact, they are never thoroughly watered until considerable growth has been made. Gloxinias are to a great extent surface-rooters, and to wet the whole mass of earth means stagnation. Proper aëration of the soil is important. Whenever we find a plant not doing well in a pot we can nearly always trace it to a defect in this particular.

Seed of Chinese Primulas should be sown now for autumn and winter blooming. I make no choice of the many strains offered. If obtained from a reputable seedsman they should be good. Free drainage and light soil are essential for these in the earlier stages. When well-rooted and ready to go into the flowering-pots late in August a little heavier soil may be used. Opinions vary on this point, and I have seen first-class Primulas grown all through the season in very light soil. The plants will do better during the summer months in cold frames having an easterly exposure, with the sashes slightly shaded and well tilted to allow of free circulation of air, night and day. As naturally the plants bloom early, only large specimens can be had by taking out the flowering scapes as they appear until within three or four weeks of the time they are required to bloom. At the same time any poor varieties can be weeded out.

It is probable that many of the large specimen plants of Cyclamen Persicum exhibited in Horticultural Hall, Boston, at the last spring show, were two-year-old bulbs. It is a common practice to raise seedlings the preceding summer, and keep them growing for fifteen or eighteen months. For ordinary decorative purposes plants in six-inch pots, with about twenty-five flowers, are large enough, and usually can be grown from seeds sown in December. In the early stages light soil should be used. Some growers use dry sphagnum-moss, chopped fine, and broken charcoal mixed with the loam. Charcoal, as an auxiliary in draining and sweetening the soil, is not as generally used as it should be. Heavier soil may be used later. The summer treatment accorded Chinese Primulas suits Cyclamens exactly. Cyclamens have not done well with me of late years. I have been compelled to throw away handsome-looking plants every year, through attacks of the root-gall, presumably, nematodes of some kind. It is difficult to get loam free from them.

Looking months ahead, sometimes a whole season, we divide up our last year's stock of Astilbe Japonica for lifting next autumn. Those forced this season need resting; so also with Deutzia gracilis. A few cuttings put in every year keeps our stock replenished; soft shoots taken now from plants in bloom answer well. I can bear out Mr. Craig's statement that it is better to grow these plants altogether in pots, as I have grown mine in this way now for three years. It is better to propagate Marguerite Daisies and Stevias in June and grow them in pots than to plant them out. Thus treated they are more easily handled and kept in better shape than when planted out. The little blue Paris Daisy, Agathæa cœlestis, is an excellent winter bloomer. It is equally good in summer. It seems to me it would make a good bedding-plant, although I have never seen it tried. Cytisus of all kinds when small should be grown in pots; large specimens, with a good ball of earth, do better turned out. Indian Azaleas may safely be planted out, and even Camellias, but care must be taken that the surrounding soil is packed firmly to the ball of earth.

Wellesley, Mass. *H.*

Indian Azaleas.

MANY people who have bought Indian Azaleas for Easter decorations will hardly know what to do with their plants when out of bloom. The majority, no doubt, were imported plants, potted in indifferent soil, as a medium for forcing and convenience in handling, rather than for growing them on continuously in the pot. All dead flowers, with the seed-vessels, should be picked off, and any soft growth, which often comes with the blooms, should be cut away, so as to keep the plant in neat bush shape. Ample time will be left for new and more even growth to develop and properly ripen before the autumn. It is customary in small towns to "board" the plants until the next season with the neighboring florist. This is, no doubt, a good plan for those who have no garden; but those who have—and such people are, as a rule, interested in caring for their plants themselves—will have no difficulty in growing them. They will do well in any good garden-soil. A partly shaded position is best suited for them, such as might be given on the north side of an Apple-tree or Pear-tree. In turning the plants out of the pots it will be found that very few new roots, if any, have been made. The original ball of earth should be pricked, or, rather, scratched, over with a pointed stick, so that the new soil will better adhere to it. The planting ought to be made in a slight depression or basin, with the ball covered not more than an inch, and the soil packed firmly about it, so that when water is given it should run through it rather than between the sides and the new earth. This is important. The planting out may be done any time after danger of frost is past, and from then until the first of September abundance of water should be given—twice a day during dry weather, and even a day or two after rain, although the soil may appear moist enough, it would be safer to give water. After the first of September less water will be needed, but it should never be withheld long enough for the ball to get dry. Some time in October the plants will need repotting, and as only a few fine roots will be found on the outside of the original ball a pot but little larger than the one in which it was flowered will be large enough. Some fine sandy loam should be carefully sifted in, so as to make sure there are no air-spaces left, and the whole made still further firm with a lath jammed in along the sides of the pot. The flower-buds will be already set, and

may be felt in the leafy tips of the shoots. The object now should be to keep the plants as dormant as possible. Very little light will suffice, providing that the temperature of the storage-place is low enough, say, forty degrees, Fahrenheit, not to excite them into growth. They may be kept in first-rate condition in an ordinary barn-cellar; even a house-cellar would do if shut off from furnace-heat. Water might be needed once a week or once a month; it depends on whether the place they are kept in is dry or moist. A month before Easter is early enough to bring them out into warmth and light, and they will bloom well in an ordinary house-window.

Wellesley, Mass. *T. D. Hatfield.*

Notes on Carnations.

THE time for planting young stock out-of-doors is now close at hand and the plants should be gradually hardened off. Ours are now in cold frames, where they are freely ventilated, and some air is left on overnight, except when frost is threatened. In this latitude we usually commence to plant out from the 15th to the 20th of May. In some years there is a light frost after these dates, and Coleus or other tender bedding-plants are killed, but Carnations have not been damaged. We allow our plants eighteen inches between the rows and place them a foot apart in the rows. Between every fourth row we leave a path two feet wide. The plants can be topped and hoed from these paths and all weeds raked into them.

The soil best suited to most varieties of Carnations appears to be a rather light, sandy loam well enriched with manure. Certain varieties prefer a heavier soil, and the finest Grace Wilders I have seen were grown in a heavy clayey loam. As a general rule, however, we find that Carnations do best in a sandy compost. They also lift with much better roots at planting time.

Summer-blooming Carnation plants should now be nicely rooted in three-inch pots. These should not be stopped after this time if good flowers are desired by the middle of July. Mrs. Fisher is still the best all-around variety in this class. It is as satisfactory for summer flowers as it is unsatisfactory for winter blooms. Nobscot is unexcelled as a scarlet. William Scott and Daybreak are good bloomers of their respective shades of pink, and F. Mangold does fairly well as a crimson. We usually test a few plants of the newer varieties each season to try their capabilities as outdoor bloomers; it is possible some kinds, while not successes indoors, may prove useful outside. Young stock to be grown along for next winter's crop should be gone over at least once a week and stopped before running up too much. As a rule these are grown in boxes; if in pots they will need very careful attention in watering, as at this season they dry out rapidly. If they are becoming pot bound they should be transferred to a pot a size larger.

Carnation-houses will now need an abundance of ventilation. In addition to opening the roof-ventilator, some side or bottom air should be admitted daily on bright days unless a cold wind prevails. A good crack of air should be left on all night. Under no circumstances should ventilators be closed tight after this season of the year. On the morning of every clear day we give our plants a thorough good syringing; this is necessary to keep down that insidious foe, red spider, which will quickly ruin a batch of plants if these precautionary measures are not used.

Plants indoors are now giving an abundance of flowers. The individual flowers are diminishing somewhat in size, and as the beds are a mass of roots, abundant watering is needed and slightly stronger stimulants. We have gone over our plants recently, cleaned and tied them up for the last time, and after slightly loosening the surface gave them a mulching of well-rotted cow manure screened through a one-inch sieve. The plants repay this attention. Quite a number of growers do not stake their plants at all, and seldom or never clean them, at this season of the year. Plants so neglected show a marked contrast to those more carefully looked after. Certainly no one who has once staked and cleaned his plants will want to go back to the old careless and slovenly method of growing them. We find that during bright weather such as we are now having, our plants require a good watering every other day, and once a week we use stimulants. Some shade will now be needed on the glass. We use a mixture of naphtha and common whiting to which is added a little hard boiled linseed oil. The shade is applied with a common whitewash brush; it need not be put on thickly as yet.

Some Carnations which have not bloomed very freely during winter are now giving fine crops of flowers. Among pink ones Ada Byron easily takes the lead with us. It is to be regretted that this variety is not a satisfactory winter bloomer. It has a beautifully fringed flower of good size and color, with a delightful odor, and is borne on a dense stout stem; we have not seen a burst calyx. As a spring and summer bloomer it is unsurpassed. Helen Keller, the best striped variety in commerce, is a grand sort grown as Messrs. Lonsdale and Dailledouze showed it at the Boston Carnation Show. We find, however, that it has a bad habit of "going sleepy" or fading out its blooms instead of opening them properly. Fully half the flowers on the small lot of plants we grew are useless, and other growers near by say theirs are similarly affected. We purpose trying ours in a heavier compost next season. Among pink varieties, William Scott is far the most consistent bloomer, and appears to give general satisfaction. Some growers still cling to the old Grace Wilder, and two thousand of these flowers which I saw recently were excellent, though in some instances the calyx was burst. Fred Creighton, another pink variety, almost discarded, was also noted in splendid condition. This variety gives a great spring crop of bloom, but flowers only moderately in winter.

Some of the new varieties sent out during the present year promise to be of first quality. Alaska, from Mr. Chitty, and Storm King, from Mr. Ward, are very highly spoken of by all who have seen them, and the Canadian variety, Bride of Erlescort, has many admirers. Meteor is bidding for popular favor as a crimson, while Mr. Dorner's Bridesmaid, Mr. Simmons' Rose Queen and Mr. Hunt's Peachblow are all promising pink varieties. It is unfortunate that the new yellow, Dean Hole, has been attacked by rust. There is much need of a good yellow, since none of the kinds at present grown are very satisfactory. A good scarlet which will bloom and grow as well as Portia, with flowers the size of Hector, is much needed. Hector is a fine scarlet, but it has defects in its lack of stem, bursting of calyx and fading out of flower. It is, however, a good Carnation, and the best one of its color now grown.

Taunton, Mass. *W. N. Craig.*

Early Flowers.

THERE are few prettier sights in the garden on a bright sunny day of the early year than a bed of the little Anemone blanda or A. Apennina. I fear that there are few rarer sights than a good colony of the first species unless more care is taken of them than is usual in the average garden, for, like all plants which die down, in the early year they offer special opportunities to the destructive garden-helper. It will probably be found to be the best practice to take up the tubers when ripened and store them in sand in the early autumn, when they may be replanted. The small pieces of roots of this species usually received make large strong tubers, even in our heavy soil, and I think it is only the tidying up of the borders which prevents their constant increase, for a lot of tubers planted between Sedums and other plants, which are watered during the summer, hold their own. My impression is that Anemone blanda is adapting itself to to our climatic conditions in its flowering period. Our winters are so variable that one can only arrive at an accurate conclusion after many years' experience, and this plant has been grown here only five seasons. When first grown it flowered about the first of January, the season being open. Since then the period of flowering has varied greatly, but on the whole with a later tendency. This year they are yet in flower at a time when A. Apennina is usually expected.

Up to the present time the garden is dependent almost entirely on bulbous plants for flowers, the few Saxifrages and small alpine plants not making much effect, and, in fact, being unreliable and uncertain here. As yet among the non-bulbous plants flowers are only found on Hepaticas, hybrid Primroses, Dondia epipactis and Arabis alpina, with the alpine Poppies and Aubrietias just opening. Hepaticas being abundant in the woods are too much neglected in gardens, where, in a suitable location, they thrive and are a capital illustration of the rare beauty of common things. I wish Primroses were as common as their beauty deserves. They are plants so easily grown and increase so rapidly that there seems no reason why they should not be seen in every garden, and at this season they cover themselves with lovely flowers, ranging in color from white, through the yellows and reds. A well-grown Primrose, with flowers on single stems, poised just over the lusty leaves, is a very pleasing sight. Arabis is the best white-flowered plant of the spring, as its prostrate growth is covered with sunny bloom. It has a pleasing way of wandering around the garden and showing at this time its flowers in new places.

Elizabeth, N. J. *J. N. Gerard.*

Greenhouse Plants in Bloom.—Among the noteworthy plants in bloom here at the present time are several good old things which are not so well known as they might be. Among the climbers, Petræa volubilis is quite a pleasing sight. The flowers are arranged in long racemes opposite each other; they are bright purple, both calyx and corolla being nearly of the same color. There is a white variety not very commonly met with which is a pleasing companion to the purple one. The Petræa, from its habit of growth, requires a position where it can be planted out. It is a quick grower, reaching a height of about twelve feet before it makes much of a show.

Adenocalymna comosa, a beautiful yellow-flowered Bignoniaceous vine, is blooming for the second time this season. In the large Palm-house it may be seen twined in festoons from Palm to Palm, and occasionally a long shoot hanging down, beautifully laden with flowers. This is a good vine for a large greenhouse; it seems to do equally well in sun or shade. It is propagated by means of cuttings taken off before the young wood begins to push out. The cuttings will root either with or without a heel.

Botanic Garden, Washington. *G. W. Oliver.*

Adonis vernalis.—This thoroughly good plant is now in bloom, the large yellow corolla, with its deeply cut leaf, reminding one of the earlier Winter Aconite, and makes a pleasing successor. It is a native of southern Europe and is one of the oldest garden-plants, although, strangely enough, it is found in comparatively few American gardens. It is perfectly hardy and thrives in almost any soil and situation; it is a good plant for the rock-work on the garden border. One caution should be observed by those who try to cultivate it, and that is to avoid transplanting it too often; it should be planted where it is to stay and left undisturbed for years. With this treatment a single plant soon becomes a clump, bearing numerous flowers and making a bright feature in the early spring garden. The propagation is by division, but plants are so inexpensive that it is much better to increase one's stock by purchase. The best time for planting is October or early November.

Jamaica Plain, Mass. *B. M. W.*

Correspondence.

Notes from the South-west.

To the Editor of GARDEN AND FOREST:

Sir,—We have just passed through the most severe winter known here since the war. Gladioli and Montbretias by the hundreds, Cannas and Dahlias by the score, that I have left for fifteen years in the open ground over winter, are this spring but bits of rotted pulp. Solanum jasminoides, Physianthus albens, Antigonon Leptopus, Ipomœa Mexicana and Manettia cordifolia, all beautiful half-hardy vines that for a half-dozen years have stood the winters unprotected, sheltered only by a lee of the building, are dead as the proverbial nail this spring.

On the other hand, Peach-trees, the blossoms of which were killed both last year and the year before, were remarkably full of bloom this year, and I have never seen my Tea and Hybrid Perpetual Roses with so little dead or unsound wood on them at this season of the year. It is a matter of comment how full of bloom all shrubs and trees are. It is worthy of notice, also, that none of the hardier plants, Hyacinths, Tulips, Crocus, etc., were injured in the least.

The lesson is plain. We people of the south and south-west must protect half-hardy bulbs and tubers over winter by heavy mulching. To be sure, we may cover them ten times, and the ground never freeze below a two-inch crust; but the eleventh time an exceptional winter may come, and the ground freeze to more than twice that depth, when the entire stock gathered together through many a laborious year will be lost. If this mulching is of rotted manure the labor need not be lost in any event, for by spring it is more rotted and friable, and can then be dug in the beds to enrich them. Some of our beds were lightly covered with manure last fall. In these quite a number of half-hardy bulbs survived. A deeper covering would have saved them all.

One of our Pear-trees is showing a singular freak. It is covered with extra-large flowers, each distinctly semi-double. Each blossom has from ten to twelve broad, white petals, and the large clusters are very ornamental.

Pineville, Mo. *Lora S. La Mance.*

The Hardiness of the Cherokee Rose.

To the Editor of GARDEN AND FOREST:

Sir,—On page 114 it is said that the Cherokee Rose is tender, and in the north suited only to the greenhouse.

Will you permit me, in the interest of the wider open-air culture of this handsome Rose species, to say that a plant of Rosa Sinica, obtained two years ago from Messrs. W. Paul & Son, of Waltham Cross, England, has not only survived the past winter here with absolutely no protection, but has now broken vigorously into leaf almost to the tips of its spray-like growth. Thirty-three degrees of frost were registered by the thermometer in the screen and continued high winds prevailed.

Salem, N. J. *G. L. C.*

[The Cherokee Rose, as naturalized in this country, is not hardy as far north as New Jersey. It will survive mild winters in Washington, but is not reliably hardy there. It is a noteworthy fact, therefore, that a plant of this species has survived the late trying winter in Salem, New Jersey, and it would be very interesting to know from what quarter Messrs. Paul & Son received their stock. It is a well-known fact that plants of the same species vary in their ability to resist cold when taken from a more southern or more northern part of their natural habitat. Thus, the so-called Japanese Persimmon, or Kaki, is only known in this country as a semi-tropical tree, while plants of apparently the same species flourish in a climate as rigorous as that of New England, and, no doubt, seedlings from these trees would prove hardy in a much colder climate than the Kaki as it is known in Florida and southern California. It may well be that Messrs. Paul & Son have received some plants or seed of Rosa Sinica from a more northern region than that from which the original Cherokee Rose was derived. It is to be hoped that the stock from our correspondent's plant will be tried in still more northern latitudes.—ED.]

Recent Publications.

List of the Pteridophyta and Spermatophyta growing without cultivation in north-eastern North America, prepared by the committee of the Botanical Club of the American Association for the Advancement of Science, from the Memoirs of the Torrey Botanical Club. Volume V.

This book has grown out of the discussions of the principles of plant nomenclature which have been going on for the last ten years in the United States with much activity, and not always in the best taste. The matter was taken up by the botanists of the American Association for the Advancement of Science at their meeting held at Rochester, in 1892, where a committee was appointed which drafted the set of resolutions to govern the naming of plants, which have been adopted in the preparation of this report. It is unnecessary here to discuss the principles of this code, as they are now well known, and are substantially those adopted in this journal, and now by nearly all the working botanists of the United States, and it is enough to say, perhaps, that in most cases the catalogue appears to have been well done, although an examination of some groups will show that the compilers performed their work carelessly, or were not supplied with all the literature on the subject; and in other groups species have been proposed which can hardly be retained when the plants are studied by monographers from the point of view of their characters, and not merely of the names which botanists have applied to them, as must have been the case in the preparation of a catalogue of this kind in the short time that has been devoted to it. The names of plants are important, of course, to all working botanists, and it is well to have those of north-eastern North America arranged here conveniently with their synonyms; but, after all, the name of a plant is one of the least important things about it; certainly less important than its morphological characters, relationship, distribution, properties and uses.

It is now eight years since Professor Asa Gray died, leaving his *Synoptical Flora of North America* half-finished. The task of completing this great work, in which it was proposed to describe briefly all the plants in North America north of Mexico, fell upon Mr. Sereno Watson. He died three years ago, and since Professor Gray's death not a page of the *Synoptical Flora* has appeared. Now, however,

that the question of the names of the plants in one part of the country has been settled, or almost settled, perhaps the long-felt want of a comprehensive Flora of North America in compact form, and suitable for the use of students, may be supplied for them. Such a work can never be final, but it is absolutely needed, even if it is imperfect, to enable students and collectors in all parts of the country to carry on their investigations intelligently.

Notes.

Among the flowers for sale on the street-stands Marsh Marigolds, Caltha palustris, have been very abundant and popular during the week past.

The so-called Lemon-scented Verbena, from the western coast of South America, Lippia citriodora, is said to have been among the earliest of the shrubs planted in the southern part of California, where it is now one of the most popular plants, and attains the proportions of a fair-sized tree.

This is the autumn of the year in South Africa, and fresh grapes are now arriving in London from Cape Colony in good condition and are selling by the box at one shilling a pound. Boxes of Louise Bonne pears, each containing thirty fruits, have sold at thirty shillings, at which price some one ought to realize a handsome profit.

Would it not be more satisfactory if retail florists were more particular in giving customers the true names of plants and flowers which they admire? In one of the most aristocratic shops of this city a beautiful plant of Andromeda speciosa attracted much attention lately, and visitors who inquired what it was were calmly informed that it was a Canterbury Bell.

Mr. H. J. Hale writes to the *Florists' Exchange* that in his three-year-old Peach orchard, in Georgia, every one of the hundred thousand trees is loaded with fruit, and some of them now carry ten times too many peaches for a full crop. Much of this fruit will drop about the time when the pits are forming, but, allowing for this, the indications are that the trees will have to be hand-thinned and at least three times as many peaches picked from them as are allowed to remain.

A correspondent of *The Garden* writes that one of the great attractions at the recent bulb show in Haarlem were some groups of Tulip species. The very early and showy Tulipa Kaufmanniana, mentioned in another column of this issue, is said to have flowers resembling some of the Magnolia-flowers while in bud, but opening white, yellowish toward the centre, with a dash of red on the outside. T. violacea is also very early, and has bright magenta-red flowers. T. linifolia, named for its narrow leaves, has flowers of a bright scarlet. T. Batalini has a pure soft yellow flower, which is small, but very pretty. The early Irises also were said to have attracted great attention. The best of those which will flourish in this country have been more or less mentioned in these columns by Mr. Gerard.

The first California cherries of this year reached New York on April 24th, one week earlier than last year. These were Black Tartarians. Since then small lots of the white cherry Rockport Bigarreau have arrived, but the fruit is small and unripe. Ten-pound boxes are offered at wholesale for $2.50. Some extra large Porto Rico pineapples are offered at fifty to seventy-five cents each. Easter Beurre pears of large size bring $1.50 a dozen, and selected Newtown Pippins, from Ulster County, in this state, sell for $1.50 a peck basket. Large bunches of Almeria grapes sell at the rate of fifty cents a pound, and Black Hamburg grapes, from Rhode Island, at $3.00 to $3.50 a pound. Strawberries, from Charleston, of fine color and flavor, said to be Hoffman's Seedlings, sell for sixty cents a quart.

Messrs. Ellwanger & Barry send us an extract from a letter which one of their customers has written to say that small plants of the Crimson Rambler Rose, in two and a half inch pots, set out in the open border last autumn, have stood the severe weather without any mulch, and are now beginning to make a good growth. This was in a climate where the thermometer fell to six degrees below zero during the winter, with much alternate freezing and thawing, and this speaks well for the hardiness of the Rose. On the other hand, we have a letter from Herr Max Leichtlin, who states that at Baden-Baden, where the temperature once dropped to five degrees below zero, and at another time to eight degrees, the wood of the Crimson Rambler became brown, and the buds of these shoots are not starting as well as they should. The fact that strong shoots are coming up from the roots seems an additional proof that the exposed branches at the top had suffered very much. Herr Leichtlin adds that it ought to be said in favor of the Rose that last summer and autumn were extremely wet and cool, so that the wood did not ripen as well as it would naturally be expected to do in our hot and dry climate.

In the April number of *The Chautauquan*, Mr. Sidney Weyman has an interesting article on the German Forest, in which he points out that the value of the forest in its relation to climate and health is more fully appreciated in the German Empire and in Austria than in any other countries in the world. Its important place in the national economy is seen from the fact that the forests give employment to a quarter of a million of persons, and yet, more remarkable still, is the sentiment of affection and pride with which the people regard the forest as the dominant feature of the country. The forest has always played a great part in the history of the German people. In the early centuries the Germans were born and bred in the woods, and the forest still has a hold on the imagination of the people as a place of refuge and shelter and a home, a sentiment which we look for in vain among any of the Latin nations. The Frenchman retires for rest to the water-side, but the German seeks change of scene among picturesque forest sites, where the pure air is supposed to bring health and relief from all bodily ills. Week after week the nerve-racked German will spend whole days from morning till sunset in the woods. Many of the people have little taste for fashionable life and take their holidays in out-of-the-way nooks and corners, living in solitary forest inns and cottages for weeks together. Notwithstanding the enormous growth of the German towns the national love of the forest seems to have become more intensified. In the winter there are sleighing-parties in the woods, and at Easter and Whitsuntide the forests swarm with tourists, and the school youth of Germany make long pedestrian journeys through them in the spring. The rifle clubs and singing clubs of every town meet in the nearest wood, and to provide for these various festivities there are any number of excellent inns scattered throughout the length and breadth of the forests. Bismarck lives in the midst of an old Saxon forest, and the Germans love to erect the monuments of their great men amid forest solitudes. A great portion of the poetry and literature of the country is connected with the forest, and from Schubert's songs to Wagner's operas their music is saturated with forest sentiment, their dramas are set in forest scenery and deal primarily with forest life.

Kale, spinach and lettuce comprised the principal greens of the winter season, and these are still offered, with dandelion, tarragon, sorrel, beet-tops, mint and clumps of chives. Large quantities of radishes are coming from Norfolk, peas from Charleston and Savannah, and string-beans from Florida. Asparagus of excellent quality is being forwarded from points between South Carolina and New Jersey. The grade from Charleston known as Extra Fancy brings sixty cents a bunch, and choice asparagus from southern New Jersey costs fifty cents. New celery from New Orleans brings fifty cents for three stalks. Egg-plants from Florida are rare, and small ones command forty cents each. Crook-neck and green squashes cost ten to fifteen cents each. New potatoes from Florida are somewhat higher than those from Bermuda, and bring sixty cents a half-peck. Peppers from Cuba bring seventy-five cents a dozen, and okra, from the same place, ten cents a dozen. Hot-house beets from Boston cost twenty cents a bunch, those from Florida and Bermuda bringing nearly as much. Carrots, cauliflower and long English frame cucumbers also come from northern hot-houses. Mushrooms at eighty-five cents a pound, cranberries at twenty cents a quart and French artichokes at twenty-five cents apiece are among other staples on the best-stocked vegetable-stands. The superiority of vegetables carefully grown under glass over those which are grown out-of-doors in the south is seen in the fact that cucumbers from Louisiana and Florida are worth ten cents each, while those from Boston hot-houses command fifteen cents each. Tomatoes from Cuba, Florida and Bermuda are worth thirty-five cents a pound; those from northern hot-houses command twice that amount. What with modern skill in growing vegetables under glass, and increased means of transportation, it is now possible to find almost any vegetable in New York at any season of the year, with the exception of sweet corn.